



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,528	02/20/2001	Yasuhide Yagyu	Q62852	5340

7590

02/20/2003

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC  
Suite 800  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037-3213

EXAMINER

CUEVAS, PEDRO J

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/785,528

Applicant(s)

YAGYU ET AL.

Examiner

Pedro J. Cuevas

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments filed January 3, 2003 have been fully considered but they are not persuasive.
2. In response to applicant's argument regarding a contradiction present on page 3 of the Office Action mailed on November 15, 2002, this typographical error has been corrected in the following rejection.
3. In response to applicant's argument that none of the prior art references present in the 35 USC § 103 rejection of claims 1, 6, and 9 disclose a "cylindrical portion arrangement so as to surround the rotary shaft", this limitation has been addressed in detail in the present rejection.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,770,900 to Sato et al. in view of U.S. Patent No. 4,720,646 to Torimoto, further in view of U.S. Patent No. 5,977,669 A to Yoshida et al.

Sato et al. disclose the construction of a stepper motor comprising:

a stator core (28 and 29);

a rotor (22) held by a rotary shaft with a predetermined void between said stator core and the rotor;

Art Unit: 2834

a bobbin-shaped insulator (27, 34) mounted on said stator core provided with a flange portion (23, 24) on at least one of outer diameter side and inner diameter side, and wound with a stator winding (25, 33); and

conductors (34a) and insulating layers arranged on outer diameter side of said circular arc-shaped flange portions of said bobbin-shaped insulator and are laminated alternately in axial direction;

wherein said conductors are provided with a connecting portion (37, 38) for connecting terminal lead wires of said stator winding corresponding to lead positions of said terminal lead wires.

However, it fails to disclose the use of:

annular conductors and a terminal holder fixed to a flange portion of a bobbin-shaped insulator; and

a terminal holder fixed to said flange portion of said bobbin shaped insulator and provided with a cylinder portion arranged so as to surround said rotary shaft.

Torimoto teach the use of annular conductors (4) for the purpose of providing reliable coil lead wires.

Yoshida et al. teach the construction of a terminal unit (41) containing male-connector (41a) for the purpose of connecting the integral circuit with the outside, and provided with portions (52 and 53) arranged so as to surround said rotary shaft.

It would have been obvious to one skilled in the art at the time the invention was made to use the annular conductors disclosed by Torimoto with the terminal unit and connectors

Art Unit: 2834

disclosed by Yoshida et al. on the stepper motor disclosed by Sato et al. for the purpose of providing connecting internal circuits with the outside using reliable coil lead wires.

6. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,770,900 to Sato et al. in view of U.S. Patent No. 4,720,646 to Torimoto, further in view of U.S. Patent No. 5,977,669 A to Yoshida et al. as applied to claims 1, 6 and 9 above, and further in view of U.S. Patent No. 5,986,379 to Hollenbeck et al.

Sato et al. in view of Torimoto, further in view of Yoshida et al. disclose the construction of a stepper motor as described above.

However, it fails to disclose the flange portion of the bobbin-shaped insulator having an engaging window, the terminal holder having engaging claws for engaging with the engaging window, and the terminal holder being held by and fixed to the bobbin-shaped insulator by engaging the engaging claws with the engaging window.

Hollenbeck et al. teach the use of engaging members (126) and corresponding notches (125) for the purpose of hold the circuit board to the stator assembly.

It would have been obvious to one skilled in the art at the time the invention was made to use the engaging members and corresponding notches disclosed by Hollenbeck et al. on the stepper motor disclosed by Sato et al. in view of Torimoto for the purpose of holding the terminal holder to the bobbin-shaped insulator.

7. Claims 3, 4, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,770,900 to Sato et al. in view of U.S. Patent No. 4,720,646 to Torimoto, further in view of U.S. Patent No. 5,977,669 A to Yoshida et al. as applied to claims 1, 6 and 9 above, and further in view of U.S. Patent No. 5,585,685 to Maeno et al.

Sato et al. in view of Torimoto, further in view of Yoshida et al. disclose the construction of a stepper motor as described above.

However, it fails to disclose:

the flange portion of the bobbin-shaped insulator and the mounting portion of the terminal holder being provided with screw portions;

the terminal holder is held by and fixed to the bobbin-shaped insulator by fitting the screw portions with screws; and

the annular electric conductors and the insulating layers laminated alternately being held by a holding portion of the terminal holder through an elastic member.

Maeno et al. teach the use of screw portions (13) and an elastic member (6) on the construction of a vibration driven apparatus for the purpose of providing a vibration driven apparatus in which an electro-mechanical energy conversion element is clamped between first and second elastic vibration members, at least one elastic vibration member is formed to project from a region of the conversion element, and a movement relative to a contact member is achieved by a vibration formed on the projecting portion, and which generates a large driving force and can be miniaturized.

It would have been obvious to one skilled in the art at the time the invention was made to use the screw portions and an elastic member disclosed by Maeno et al. on the stepper motor disclosed by Sato et al. in view of Torimoto for the purpose of providing a vibration driven apparatus in which an electro-mechanical energy conversion element is clamped between first and second elastic vibration members, at least one elastic vibration member is formed to project from a region of the conversion element, and a movement relative to a contact member is

Art Unit: 2834

achieved by a vibration formed on the projecting portion, and which generates a large driving force and can be miniaturized.

8. Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,770,900 to Sato et al. in view of U.S. Patent No. 4,720,646 to Torimoto, further in view of U.S. Patent No. 5,977,669 A to Yoshida et al. as applied to claims 1, 6 and 9 above, and further in view of common knowledge in the art.

Sato et al. in view of Torimoto, further in view of Yoshida et al. disclose the claimed invention except for the elastic member being formed integrally with the terminal holder or the bobbin-shaped insulator. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the elastic member integral with the terminal holder or the bobbin-shaped insulator, since it has been held that forming in one piece an article, which has formerly been formed in two pieces and put together, involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893). The term "integral" is sufficiently broad to embrace constructions united by such means as fastening and welding. *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973).

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

Art Unit: 2834

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas  
February 13, 2003

  
